

**REGULATION 8
ORGANIC COMPOUNDS
RULE 40
AERATION OF CONTAMINATED SOIL AND
REMOVAL OF UNDERGROUND STORAGE TANKS**

INDEX

8-40-100 GENERAL

- 8-40-101 Description
- 8-40-110 Exemption, Storage Piles
- 8-40-111 Exemption, Excavated Hole
- 8-40-112 Exemption, Sampling
- 8-40-113 Exemption, Non-volatile Hydrocarbons
- 8-40-114 Exemption, Contaminated Soil Excavation During Organic Liquid Service Pipeline Leak Repairs
- 8-40-115 Exemption, Contaminated Soil Excavation Unrelated to Underground Storage Tank Activities
- 8-40-116 Exemption, Small Volume
- 8-40-117 Exemption, Accidental Spills
- 8-40-118 Exemption, Aeration Projects of Limited Impact

8-40-200 DEFINITIONS

- 8-40-201 Active Storage Pile
- 8-40-202 Aeration
- 8-40-203 Aeration Depth
- 8-40-204 Aeration Volume
- 8-40-205 Contaminated Soil
- 8-40-206 Organic Compound
- 8-40-207 Organic Content
- 8-40-208 Vapor Free
- 8-40-209 Ventilation
- 8-40-210 Emergency Removal or Replacement or Excavation
- 8-40-211 Organic Concentration
- 8-40-212 Organic Liquid Service
- 8-40-213 Volatile Organic Compound (VOC)
- 8-40-214 Vapor Suppressant
- 8-40-215 Backfill
- 8-40-216 Storage Pile

8-40-300 STANDARDS

- 8-40-301 Uncontrolled Contaminated Soil Aeration
- 8-40-302 Controlled Contaminated Soil Aeration
- ~~8-40-303 Storage Piles~~
- 8-40-304 Active Storage Piles
- 8-40-305 Inactive Storage Piles
- 8-40-306 Contaminated Soil - Excavation and Removal
- 8-40-310 Underground Storage Tanks - Removal or Replacement
- 8-40-311 Vapor Freeing
- 8-40-312 Ventilation

8-40-400 ADMINISTRATIVE REQUIREMENTS

- 8-40-401 Reporting, Removal or Replacement of Tanks
- 8-40-402 Reporting, Excavation of Contaminated Soil
- 8-40-403 Reporting, Aeration of Contaminated Soil
- 8-40-404 Reporting, Contaminated Soil Excavation During Organic Liquid Service Pipeline Leak Repairs
- 8-40-405 Reporting, Contaminated Soil Excavations Unrelated to Underground Storage Tank Activities

8-40-500 MONITORING AND RECORDS (None Included)

8-40-600 MANUAL OF PROCEDURES

- 8-40-601 Contaminated Soil Sampling
- 8-40-602 Measurement of Organic Content
- 8-40-603 Determination of Emissions
- 8-40-604 Measurement of Organic Concentration
- 8-40-605 Analysis of Samples, Initial Boiling Point

**REGULATION 8
ORGANIC COMPOUNDS
RULE 40
AERATION OF CONTAMINATED SOIL AND
REMOVAL OF UNDERGROUND STORAGE TANKS**

8-40-100 GENERAL

- 8-40-101 Description:** The purpose of this Rule is to limit the emission of organic compounds from soil that has been contaminated by organic chemical or petroleum chemical leaks or spills; ~~to describe an acceptable soil aeration procedure;~~ and to describe an acceptable procedure for controlling emissions from underground storage tanks during removal or replacement. (Amended February 15, 1989)
- 8-40-110 Exemption, Storage Piles:** Calculations of aeration volume under Section 8-40-204 shall not include storage piles that are covered per Section 8-40-~~305, 303~~ nor shall they include active storage piles so long as duration of activity does not exceed 10 hours.
- 8-40-111 Exemption, Excavated Hole:** The exposed surfaces of an excavated hole shall not be included in calculations of aerated volume under Section 8-40-204.
- 8-40-112 Exemption, Sampling:** Contaminated soil exposed for the sole purpose of sampling shall not be considered to be aerated. Inactive storage piles may remain uncovered for no longer than one hour for soil sampling purposes. ~~Removal of soil for sampling shall not qualify a pile as "active."~~
- 8-40-113 Exemption, Non-volatile Hydrocarbons:** The requirements of all sections of this Rule shall not apply if the soil is contaminated solely by a known organic chemical or petroleum liquid and that chemical or liquid has an initial boiling point of 302oF or higher provided that the soil is not heated. (Amended February 15, 1989)
- 8-40-114 Exemption, Contaminated Soil Excavation During Organic Liquid Service Pipeline Leak Repairs:** The requirements of Section 8-40-402 shall not apply if contaminated soil is being excavated in order to repair leaking organic liquid service pipelines and if no more than 5 cubic yards of contaminated soil are generated, and provided the requirements in Section 8-40-404 are satisfied. (Adopted February 15, 1989)
- 8-40-115 Exemption, Contaminated Soil Excavation Unrelated to Underground Storage Tank Activities:** The requirements of Section 8-40-402 shall not apply where contaminated soil is discovered during excavations unrelated to underground storage tank activities, and provided the requirements in Section 8-40-405 are satisfied. (Adopted February 15, 1989)
- 8-40-116 Exemption, Small Volume:** The provisions of this rule shall not apply to excavation and aeration projects where:
116.1 the total volume of contaminated soil is no more than 1 cubic yard, or
116.2 the total volume of contaminated soil is no more than 8 cubic yards and organic content does not exceed 500 ppmw as determined by the procedures in Sections 8-40-601 and 8-40-602.
This exemption may be applied to any single excavation site or facility no more than once in any 3 month period.
- 8-40-117 Exemption, Accidental Spills:** The provisions of this rule shall not apply to soil contaminated by accidental spillage of five gallons or less of liquid organic compounds.
- 8-40-118 Exemption, Aeration Projects of Limited Impact:** The requirements of Sections 8-40-403, and 8-40-405 shall not apply to any aeration project in which total project emissions of volatile organic compounds are less than 150 lbs, and total project emissions of toxic air contaminants are less than the limits listed in Table 2-1-316 in District Regulation 2, Rule 1.

8-40-200 DEFINITIONS

- 8-40-201 Active Storage Pile:** A ~~storage pile of contaminated soil~~ to which soil is currently being added or from which soil is currently being removed. Activity must have occurred ~~or be anticipated to occur within one hour to be current and may not exceed 10 hours duration.~~
- 8-40-202 Aeration:** Exposure of excavated ~~contaminated~~ soil containing volatile organic compounds to the air.
- 8-40-203 Aeration Depth:** The smaller of the following: the actual average depth of contaminated soil; or 0.15 meters (0.5 feet) multiplied by the daily frequency with which soil is turned. (Amended February 15, 1989)
- 8-40-204 Aeration Volume:** The volume of soil being aerated shall be calculated as follows: the exposed surface area (in square feet or square meters) shall be multiplied by the aeration depth. The exposed surface area includes the pile of excavated soil unless the pile is covered per Section 8-40-305303. (Amended February 15, 1989)
- 8-40-205 Contaminated Soil:** Soil which has an organic content exceeding 50 ppmw, as measured using the procedure in Section 8-40-602, exceeding 50 ppm(wt), or soil which registers an organic concentration greater than 50 ppmv (expressed as Methane, C1) when measured using the procedure in Section 8-40-604. Soil which has an organic content of 50 ppmw or less, as measured using the procedure in Section 8-40-602, shall be considered to be not contaminated.
- 8-40-206 Organic Compound:** Any compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates and ammonium carbonate.
- 8-40-207 Organic Content:** The concentration of volatile organic compounds measured in the composite sample collected and analyzed using the procedures in Sections 8-40-601 and 8-40-602.
- 8-40-208 Vapor Free:** The process of purging gases from a tank using dry ice to replace organic vapors with an inert atmosphere.
- 8-40-209 Ventilation:** The process of purging gases from a tank by blowing or drawing another gas through the tank.
- 8-40-210 Emergency Removal or Replacement or Excavation:** A removal or replacement of a tank or an excavation of contaminated soil carried out pursuant to an order of a state or local government agency issued because the contaminated soil poses an imminent threat to public health and safety. (Adopted February 15, 1989)
- 8-40-211 Organic Concentration:** The concentration of volatile organic compounds measured in ppmv (expressed as methane, C1) above the soil surface using the procedures in Section 8-40-604.
- 8-40-212 Organic Liquid Service:** The conveyance or storage of volatile organic compounds that are typically liquid at standard temperature and pressure, as applied to tanks and pipelines. This does not include septic tanks, sewer lines, storm water drainage, fresh water lines, natural gas lines, or electrical conduit.
- 8-40-213 Volatile Organic Compound (VOC):** Any organic compound, as described in Section 8-40-206, which would be emitted to the atmosphere.
- 8-40-214 Vapor Suppressant:** Any material demonstrated to be at least as effective as water spray at reducing VOC emissions from contaminated soil to the atmosphere.
- 8-40-215 Backfill:** Replacement of contaminated soil to an excavated pit below existing grade performed in such a way as to minimize exposure of contaminated soil to the atmosphere. To constitute backfill, replacement of soil may be back into the original excavated pit location, or any other excavated pit located on the site where the original excavation occurred.
- 8-40-216 Storage Pile:** A pile of excavated contaminated soil located above existing grade level.

8-40-300 STANDARDS

- 8-40-301 Uncontrolled Contaminated Soil Aeration:** ~~Until June 1, 2000,~~ a person shall not aerate contaminated soil at a rate in excess of that specified in Table 1 for the degree of organic content. The limitations in Table 1 apply to the entire facility and indicate the volume of contaminated soil that may be added, on any one day, to contaminated soil that is already aerating. These limited aeration rates apply to the use of contaminated soil in daily, intermediate, or final cover operations at solid waste disposal sites (as defined in Regulation 8-34-201).

Table 1
Allowable Rate of Uncontrolled Aeration

| ORGANIC CONTENT ppm(weight) | RATE OF UNCONTROLLED AERATION | |
|--------------------------------|-------------------------------|-----------------|
| | Cubic meters/day | Cubic yards/day |
| <50 | Exempt | Exempt |
| 50 - 99 | 459.0 | 600 |
| 100 - 499 | 91.8 | 120 |
| 500 - 999 | 45.9 | 60 |
| 1000 - 1999 | 22.9 | 30 |
| 2000 - 2999 | 11.5 | 15 |
| 3000 - 3999 | 7.6 | 10 |
| 4000 - 4999 | 5.7 | 8 |
| >5000 | 0.08 | 0.1 |

Effective June 1, 2000, a person shall not aerate contaminated soil except as provided in sections 8-40-304 through 306. This prohibition includes the use of contaminated soil in daily, intermediate, or final cover operations at solid waste disposal sites (as defined in Regulation 8-34-201).

(Amended February 15, 1989)

- 8-40-302 Controlled Contaminated Soil Aeration:** ~~Until June 1, 2000,~~ contaminated soil may be aerated at rates exceeding the limitations of 8-40-301 provided emissions of organic compounds to the atmosphere are reduced by at least 90% by weight.

- ~~**8-40-303 Storage Piles:** Contaminated soil which is not being aerated shall be covered except when soil is being added or removed. Any uncovered contaminated soil will be considered to be aerated. The soil may be covered with a layer of uncontaminated soil no less than six inches deep; or it may be covered with a tarp or other covering, provided no head space where vapors may accumulate is formed and provided the covering is in good condition and is secured adequately so as to minimize emissions to the atmosphere.~~

(Amended February 15, 1989)

- 8-40-304 Active Storage Piles:** Effective June 1, 2000, contaminated soil shall be kept visibly moist by water spray, treated with a vapor suppressant, or covered with continuous heavy duty plastic sheeting or other covering to minimize emissions of organic compounds to the atmosphere. Covering shall be in good condition, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate. For any active storage pile, the surface area not covered by plastic sheeting or other covering shall not exceed 6,000 square feet.

- 8-40-305 Inactive Storage Piles:** Effective June 1, 2000, contaminated soil shall be covered during periods of inactivity longer than one hour. The contaminated soil shall be covered with continuous heavy duty plastic sheeting or other covering to minimize emissions to the atmosphere. The covering shall be in good condition, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate.

- 8-40-306 Contaminated Soil - Excavation and Removal:** Effective June 1, 2000, any person excavating and/or permanently removing contaminated soil shall adopt the following procedure:

306.1 During excavation, all exposed contaminated soil surfaces above existing grade level shall be kept visibly moist by water spray, treated with an approved

vapor suppressant, or covered with continuous heavy duty plastic sheeting or other covering to minimize emissions of organic compounds to the atmosphere. The covering shall be in good condition, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate.

306.2 All contaminated soils loaded into trucks or trailers for off site disposal or treatment shall be covered with continuous heavy duty plastic sheeting or other covering so as to minimize emissions to the atmosphere. The covering shall be in good condition, joined at the seams, and securely anchored to minimize headspace where vapors may accumulate.

306.3 All contaminated soil shall be stockpiled separately from soil which is not contaminated, unless emissions of VOC from the storage pile are minimized according to the provisions of this Rule.

306.4 Within 30 days of excavation, all contaminated soil shall be:

4.1 backfilled and covered with at least 6 inches of uncontaminated soil,

4.2 removed from the site, or

4.3 treatment to remove the contamination shall be initiated.

306.5 Treatment of contaminated soil to remove the contamination shall be subject to all applicable District Rules and Regulations.

8-40-310 Underground Storage Tanks - Removal or Replacement: Any person wishing to permanently remove or replace an underground storage tank which previously contained organic compounds shall follow the following procedure:

310.1 All piping shall be drained or flushed into the tank or other container.

310.2 All liquids and sludges shall be removed, to the extent possible, from the tank. A hand pump shall be used to remove the bottom few inches of product if necessary.

310.3 Vapors shall be removed from the tank using one of the following three methods:

3.1 The tank may be filled with water, displacing vapors and hydrocarbon liquids.

3.2 Vapor freeing.

3.3 Ventilation.

310.4 Effective June 1, 2000, all soils disturbed and/or excavated as part of the tank removal shall be subject to the requirements of Sections 8-40-301 through 306, unless the soil has been determined to be not contaminated by measurement of organic content using the procedures in Section 8-40-601 and 8-40-602.

310.5 Effective June 1, 2000, within 30 days of excavation, all contaminated soil disturbed and/or excavated as part of the tank removal shall be:

5.1 backfilled and covered with at least 6 inches of uncontaminated soil,

5.2 removed from the site, or

5.3 treatment to remove the contamination shall be initiated.

310.6 Treatment of contaminated soil to remove the contamination shall be subject to all applicable District Rules and Regulations.

(Amended February 15, 1989; June 15, 1994)

8-40-311 Vapor Freeing: No person shall vapor free ~~an underground storage tank of 250 gallons or greater capacity containing more than 0.001 gallons of liquid organic compounds per gallon of tank capacity~~ unless emissions of organic compounds to the atmosphere are reduced by at least 90% ~~by weight~~. ~~The emission control system shall be operated until the concentration of organic compounds in the tank is less than 5,000 ppm expressed as methane.~~

8-40-312 Ventilation: No person shall ventilate ~~an underground storage tank of 250 gallons or greater capacity containing more than 0.001 gallons of liquid organic compounds per gallon of tank capacity~~ unless emissions of organic compounds to the atmosphere are reduced by at least 90% ~~by weight~~. ~~The emission control system shall be operated until the concentration of organic compounds in the tank is less than 5,000 ppm expressed as methane.~~

8-40-400 ADMINISTRATIVE REQUIREMENTS

8-40-401 Reporting, Removal or Replacement of Tanks: The person responsible for the removal or replacement of tanks which are subject to the provisions of Section 8-40-310 shall provide written notice to the APCO of intention to remove or replace tanks. The written notice shall be postmarked at least 5 days prior to commencement of such removal or replacement. In the case of emergency removal or replacement of tanks, notice shall be provided as early as possible prior to the commencement of such emergency removal or replacement, to be followed by written verification not later than 5 working days after the removal or replacement is completed. The written notice of intention shall include:

- 401.1 Names and addresses of persons performing and responsible for the tank removal or replacement.
- 401.2 Location of site at which tank removal or replacement will occur.
- 401.3 Scheduled starting date of tank removal or replacement. The scheduled starting date may be delayed for no more than 5 working days, provided the APCO is notified by telephone as early as possible prior to the new starting date.
- 401.4 Procedures to be employed to meet the requirements of Sections 8-40-310.
- 401.5 If applicable, name, title and authority of the state or local government representative who has ordered a tank removal or replacement which is subject to emergency procedures.
- 401.6 Procedures to be employed to meet the requirements of Sections 8-40-301 through 306.

(Adopted, February 15, 1989)

8-40-402 Reporting, Excavation of Contaminated Soil: The person responsible for the excavation of known contaminated soil subject to the provisions of Sections 8-40-301 ~~through 8-40-306 or 302~~ shall provide written notice to the APCO of intention to excavate. The written notice shall be postmarked at least 5 days prior to commencement of such excavation. In the case of emergency excavations, notice shall be provided as early as possible prior to the commencement of such emergency excavation, to be followed by written verification not later than 5 working days after excavation is completed. Written notice of intention to excavate may be submitted to the APCO at the same time written notice of intention to remove or replace tanks is submitted provided that such notification precedes the commencement of either tank removal or replacement or contaminated soil excavation by at least 5 days as indicated by postmark. The written notice of intention shall include:

- 402.1 Names and addresses of persons performing and responsible for excavation.
- 402.2 Location of site at which excavation will occur.
- 402.3 Scheduled starting date of excavation. The scheduled starting date may be delayed for no more than 5 working days, provided the APCO is notified by telephone as early as possible prior to the new starting date.
- 402.4 Procedures to be employed to meet the requirements of Sections 8-40-301 through 306 or 302.
- 402.5 If applicable, name, title and authority of the state or local government representative who has ordered an excavation which is subject to emergency procedures.
- 402.6 Estimated quantity of contaminated soil to be excavated.
- 402.7 Estimated average organic content of contaminated soil.

(Adopted February 15, 1989)

8-40-403 Reporting, Aeration of ~~Contaminated~~ Soil: The person responsible for aeration of any ~~contaminated~~ soil shall provide written notice to the APCO of intention to aerate soil ~~the District, by telephone~~, with the following information. The written notice shall be postmarked at least 5 days prior to commencement of such excavation. ~~This shall be provided no less than 24 hours prior to the spreading or heating of any contaminated~~

~~soil.~~ The District shall again be notified within 24 hours of a change in one or more of the following parameters:

- 403.1 Estimated total quantity of soil to be aerated
- 403.2 Estimated quantity of soil to be aerated per day
- 403.3 Estimated average ~~degree of contamination, or total~~ organic content of soil
- 403.4 Chemical composition of ~~contaminating~~ organic compounds (i.e., gasoline, methylene chloride, etc.)
- 403.5 A ~~description of the~~ basis on which these estimates were derived (soil analysis test reports, etc.)
- 403.6 Names and addresses of persons performing and responsible for the aeration project.
- 403.7 Location of site at which the aeration project will occur.

(Amended, Renumbered February 15, 1989)

- 8-40-404 Reporting, Contaminated Soil Excavation During Organic Liquid Service Pipeline Leak Repairs:** The person responsible for the excavation of no more than 5 cubic yards of contaminated soil generated by an organic liquid service pipeline leak repair shall provide written notice to the APCO as early as possible, but not later than 105 working days, after excavation is completed. The written notice shall include:
- 404.1 Names and addresses of persons performing and responsible for excavation
 - 404.2 Location of site at which excavation occurred.
 - 404.3 Date of excavation.
 - 404.4 Quantity of contaminated soil excavated.
 - 404.5 Estimated average ~~degree of contamination, or total~~ organic content of contaminated soil.
 - 404.6 Procedures to be employed to meet the requirements of Sections 8-40-301 through 306.

(Adopted February 15, 1989)

- 8-40-405 Reporting, Contaminated Soil Excavations Unrelated to Underground Storage Tank Activities:** The person responsible for contaminated soil excavations unrelated to underground storage tank activities where contaminated soil is discovered shall provide notice as early as possible upon detection of such contaminated soil, to be followed by written verification not later than 5 working days after excavation is completed. The written verification shall include:
- 405.1 Names and addresses of persons performing and responsible for excavation.
 - 405.2 Location of site at which excavation occurred.
 - 405.3 Date of excavation.
 - 405.4 Quantity of contaminated soil excavated.
 - 405.5 Estimated average ~~degree of contamination, or total~~ organic content of contaminated soil.
 - 404.6 Procedures to be employed to meet the requirements of Sections 8-40-301 through 306.

(Adopted February 15, 1989)

8-40-600 MANUAL OF PROCEDURES

- 8-40-601 Contaminated Soil Sampling:** ~~One c~~Composite samples shall be collected and analyzed for ~~every 50 cubic yards of excavated contaminated soil to be aerated as follows:~~
- 601.1 At least one composite sample shall be collected and analyzed from each inactive, uncovered storage pile within 1224 hours of excavation. ~~Samples are not required if the soil is uncontaminated.~~
 - 601.2 For excavation projects seeking exemption under the provisions of Section 8-40-116.2, at least one composite sample shall be collected and analyzed.
 - 601.3 For excavation projects subject to Sections 8-40-306 or 8-40-310, involving 250 cubic yards of contaminated soil or less, at least one composite sample shall

be collected and analyzed for every 50 cubic yards of excavated contaminated soil.

601.4 For excavation projects subject to Sections 8-40-306 or 8-40-310, involving more than 250 cubic yards of contaminated soil, at least one composite sample shall be collected and analyzed for every 100 cubic yards of excavated contaminated soil.

601.54 Each composite sample shall consist of four separate soil samples taken using the procedures described below. The soil samples shall remain separate until they are combined in the laboratory just prior to analysis.

601.62 ~~Each 50 cubic yard pile for which a composite sample is required shall be considered to have four equal sectors. One sample shall be taken from the center of each sector. Samples shall be taken from at least twelve inches below the surface of the pile. Samples shall be taken using one of the following methods:~~

~~62.1 Samples shall be taken using a driven-tube type sampler, capped and sealed with inert materials, and extruded in the lab in order to reduce the loss of volatile materials; or~~

~~62.2 Samples shall be taken using a clean brass tube (at least twelve inches long) driven into the soil with a suitable instrument. The ends of the brass tube shall then be covered with aluminum foil, then plastic end caps, and finally wrapped with a suitable tape. The samples shall then be immediately placed on ice, or dry ice, for transport to a laboratory.~~

(Amended February 15, 1989)

8-40-602 Measurement of Organic Content: Organic content of soil shall be determined by the Regional Water Quality Control Board's Revised Analytical Methods, Attachment 2, 11/8/85, or EPA Reference Methods 8010 or 8015B and 8021B or any method determined to be equivalent by the United States Environmental Protection Agency and approved in writing by the APCO or designee.

(Amended February 15, 1989; October 6, 1993)

8-40-603 Determination of Emissions: Emissions of organic compounds as specified in Sections 8-40-302, 8-40-311 and 8-40-312 shall be measured as prescribed by any of the following methods: 1) BAAQMD Manual of Procedures, Volume IV, ST-7, 2) EPA Method 25 or 25A. A source shall be considered in violation if the VOC emissions measured by any of the referenced test methods exceed the standards of this rule.

(Amended February 15, 1989; June 15, 1994)

8-40-604 Measurement of Organic Concentration: Organic concentration as specified in Section 8-40-205 shall be measured at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer complying with 40 CFR Part 60 Appendix A, EPA Method 21 Section 3, "Determination of Volatile Organic Compound Leaks, Monitoring Instrument Specifications," or any method determined to be equivalent by the United States Environmental Protection Agency and approved in writing by the APCO or designee.

8-40-605 Analysis of Samples, Initial Boiling Point: Samples of organic compounds shall be analyzed by ASTM D-1078-93 for the determination of initial boiling point as specified in Section 8-40-113.